COMPLETE LISTING OF CLAIMS
IN ASCENDING ORDER WITH STATUS INDICATOR

THIS LISTING OF CLAIMS WILL REPLACE ALL PRIOR VERSIONS AND
LISTING OF CLAIMS IN THE APPLICATION.

1.   (Currently Amended) A method for controlling a the-level of interference on a
CDMA network having mobile units in contact with a base station comprising the following
steps:

determining a the-received power of a first signal from each mobile unit;

determining a the-received power of a second signal from each mobile unit;

determining a the-power ratio of said first signal relative to said second signal;

selecting a the-lowest power ratio from all of the power ratios determined; and

using said lowest power ratio to scale upwardly a the-transmit power used to
produce said second signal to establish a new transmit power for each mobile unit on the
CDMA network.

2.   (Currently Amended) A method for controlling a level of the-interference on a
CDMA network as set forth in claim 1, wherein each said second received signal is lower in
power than said first received signal.

3.   (Currently Amended) A method for controlling a level of the-interference on a
CDMA network as set forth in claim 1, wherein said second received signal is a the-minimum
received signal each mobile unit can use which still meets a the-signal to noise ratio
requirement.

4.   (Currently Amended) A system for controlling a the-level of interference on a
CDMA network having mobile units in contact with a base station, comprising:

means for causing said mobile units to send a first signal to said base station;

means for determining a the-path gain of said first signal;

means for delivering a the-received signal strength of a second signal using the
path gain of said first signal;

means for determining a the-received signal strength of a third signal, lower in
power than said second signal, using the path gain of said first signal;

means for using the received signal strengths of said second first and third second signals at said base station for determining a power ratio for each of said mobile units;

means for selecting a the lowest power ratio; and

means for using said lowest power ratio for scaling upwardly a the transmit power each of said mobile units used for said second signal to set a new transmit power level for each of said mobile units on said CDMA network.

5.   (Currently Amended) A system method for controlling a the level of interference on a CDMA network as set forth in claim 4, wherein said second signal is lower in power than said first signal.

6.   (Currently Amended) A system for protecting a wireless digital communications network from interference from a the use of excessive power by mobile users in active communication with a base station, comprising: comprising;

means for determining a the maximum received power capability of each mobile user at said base station;

means for determining a the minimum received power, which is capable of meeting the communications quality requirements of each mobile user with said base station;

means for determining a the ratio of said maximum received power to said minimum received power of each mobile user;

means for determining a the lowest mobile user power ratio; and

means for using said lowest user power ratio to scale upwardly a the minimum power of each mobile user, which scaled power is set as a mobile the user operating power by said base station.

7.   (Currently Amended) A system for controlling interference in a CDMA wireless communications network having mobile users in contact with a base station, comprising: comprising;

means for determining a the maximum received power of each mobile active user at said base station;

means for determining a the-minimum received power each mobile user can use while maintaining an acceptable communications link between said the mobile user and said base station;

means for determining a the-ratio of said maximum received power to said minimum received power of each of said mobile users and for determining a the-lowest power ratio used; and

means for using said lowest power ratio to scale upwardly a the-transmit power of each mobile user that was used to produce said the-minimum received power at said base station to arrive at a new transmit power for each mobile active-user to use in communication with said base station.

8.   (Currently Amended) A CDMA cellular communications network wherein an active mobile user in contact with a the-base station via a link is operating at a power level determined by multiplying a the-minimum power that said active mobile user can use for quality communication with said base station by a scaling factor determined by a the-lowest ratio of maximum received power to said the-minimum received power of all of said active mobile the-users at said the-base station.

9.   (Currently Amended) A method for reducing a the-level of interference of a CDMA cellular communications network comprising: comprising;

determining a the-maximum received power of each user of the network at a base station;

determining a the-minimum received power of each user, which is capable of maintaining quality communication with said base station;

calculating a power ratio for each user by dividing a users-user's maximum received power by the user's minimum received power;

selecting a the-lowest power ratio to use as a scaling factor; and

multiplying a the-power level used by each user in determining said the minimum received power by said scaling factor to arrive at a new power level for use in communication with said base station.

10.   (Currently Amended) A method for maintaining ~~the~~ communication quality of a wireless digital data network comprising:

determining a ~~the~~ maximum receive<u>d</u> power from each active network user;

determining a ~~the~~ minimum received power <u>from each active network user, said minimum received power being representative of a minimum level of power that each active network user</u> ~~which an active network user~~ can use while maintaining quality communication within a ~~the~~ frame error rate;

determining a ~~the~~ maximum received power to minimum received power ratio of each <u>active</u> network user;<u> and</u>

scaling upwardly a ~~the~~ transmitting power of each <u>active network</u> user by multiplying a ~~the~~ transmit power which produced <u>said</u> ~~the~~ minimum received power by a ~~the~~ lowest power ratio to produce a new operating power <u>level</u> for <u>each active network user</u> ~~all users~~ not already operating at <u>said</u> ~~the~~ new <u>operating</u> power level.

11.   (Currently Amended) A method for maintaining ~~the~~ communication quality of a wireless digital data network as set forth in claim 10, wherein the transmitting power of each <u>active</u> network user is controlled at a level determined by a ratio of maximum to minimum received power of a ~~the~~ weakest <u>active</u> network user.

12.   (Currently Amended) A wireless digital communications network <u>comprising:</u>

<u>a base station;</u>

<u>at least one link; and</u>

<u>at least one active network user in communication with said base station via said at least one link,</u>

wherein <u>an</u> ~~the~~ operating power of each <u>active network</u> user is scaled upwardly by <u>a</u> ~~the~~ lowest maximum to minimum received power ratio determined for all <u>said</u> ~~of the~~ active network users.

13.   (Currently Amended) A wireless digital communications network as set forth in claim 12, wherein the operating power of each <u>active</u> network user is determined by multiplying a ~~the~~ power used to produce a ~~the~~ minimum received power by the maximum to minimum received power ratio of a ~~the~~ weakest <u>active network</u> user.

14.   (Currently Amended) A method for providing active link quality protection while improving capacity in wireless communication systems, comprising the steps of:

for a plurality of active users, recognizing error rate requirement and minimum and maximum transmit power capabilities for each active user;

assigning a first power level to each active user;

assigning a minimum transmit power so each active user's desired error rate is satisfied;

determining a ~~the~~ maximum received power possible from any of said plurality of active user<u>s</u>;

determining a ~~the~~ smallest ratio of peak received power to minimum received power of each active user;<u> and</u>

<u>for each active user,</u> scaling said minimum transmit power ~~the transmit powers of all active users~~ that was used to produce a ~~the~~ minimum received signal by the smallest ratio determined above.

15.   (Currently Amended) A method for adjusting power of new and active users and providing active link quality protection and improving capacity in wireless communication systems, through the steps of:

assigning feasible power levels to active users having minimum and maximum transmit power capabilities;

determining a ~~the~~ minimum transmit power required by the active users so <u>that</u> each <u>active</u> user's desired error rate is satisfied;

determining a ~~the~~ maximum received power possible from any <u>of the</u> active user<u>s</u> based on device peak transmit power capability and propagation characteristics;

determining a ~~the~~ weakest link; that is, the <u>active</u> user with smallest ratio of peak received power to minimum received power;

scaling <u>transmit</u> ~~the~~ powers of ~~all~~ <u>the</u> active users by the ratio determined above if maximum capacity is desired; and

scaling <u>transmit</u> ~~the~~ powers of all active links by a factor less than <u>an</u> ~~the~~ optimal as determined by a ~~the~~ number of new users to be activated and a ~~the~~ resulting new interference that must be tolerated.

16. (Currently Amended) A method for adjusting power of new and active users and providing active line quality protection and improving capacity in wireless communication systems as set forth in claim 15, wherein for less than optimal conditions, a the scaling factor $\hat{a}$ is used to scale said transmit powers of said active links where:

$$\hat{a} = \frac{\hat{B} + \eta}{\dfrac{s_i^{min}}{T_i} - \displaystyle\sum_{j \neq i} s_j^{min}}$$